

Title (en)

ADAPTIVE GATE DRIVE FOR SWITCHING DEVICES OF INVERTER

Title (de)

ADAPTIVE GATE-ANSTEUERUNG FÜR SCHALTEINRICHTUNGEN EINES WECHSELRICHTERS

Title (fr)

COMMANDE DE GRILLE ADAPTATIVE DESTINEE A DES DISPOSITIFS DE COMMUTATION D'UN ONDULEUR

Publication

EP 1751862 A2 20070214 (EN)

Application

EP 05742301 A 20050426

Priority

- US 2005014380 W 20050426
- US 56558804 P 20040426

Abstract (en)

[origin: US2005253165A1] An adaptive gate drive for an inverter includes control circuitry having a Field Programmable Gate Array (FPGA) and includes power circuitry having a plurality of FETs for operating a switching device, such as a Trench Gate Insulated Gate Bipolar Transistor (IGBT device). The control circuitry provides switching signals for operating the switching device. In addition, the control circuitry receives signals of output current of the IGBT device, temperature of the IGBT device, and DC link voltage. The FPGA has a plurality of operating points stored therein. Each operating point has corresponding parameters for a control signal that is used to control the turn-on or turn-off behavior of the IGBT device. During operation, the control circuitry compares the measured current, voltage and temperature operating points stored in the FPGA and sends the corresponding parameters to the gate drive circuit. The gate drive modifies the signal on the gate of the IGBT accordingly and thereby optimizes the turn-on and/or turn-off behavior of the device based on actual operating conditions.

IPC 8 full level

H03K 17/60 (2006.01); **H01L 29/43** (2006.01); **H02M 7/538** (2007.01); **H03K 17/0414** (2006.01); **H03K 17/082** (2006.01); **H03K 17/16** (2006.01)

CPC (source: EP NO US)

H02M 7/538 (2013.01 - EP NO US); **H02M 7/5387** (2013.01 - EP NO US); **H03K 17/0414** (2013.01 - EP NO US); **H03K 17/0828** (2013.01 - EP NO US); **H03K 17/168** (2013.01 - EP NO US); **H03K 17/18** (2013.01 - EP NO US); **H03K 17/28** (2013.01 - EP NO US); **H03K 17/567** (2013.01 - EP NO US); **H03K 17/166** (2013.01 - EP NO US)

Cited by

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DE GB

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US 2005253165 A1 20051117; **US 7274243 B2 20070925**; CA 2565453 A1 20051110; CA 2565453 C 20150623; CN 101088221 A 20071212; CN 101088221 B 20110810; EP 1751862 A2 20070214; EP 1751862 A4 20100421; EP 1751862 B1 20140723; MX PA06012425 A 20080114; NO 20065414 L 20070125; NO 337422 B1 20160411; US 2008007318 A1 20080110; WO 2005104743 A2 20051110; WO 2005104743 A3 20061228

DOCDB simple family (application)

US 11584105 A 20050426; CA 2565453 A 20050426; CN 200580020353 A 20050426; EP 05742301 A 20050426; MX PA06012425 A 20050426; NO 20065414 A 20061124; US 2005014380 W 20050426; US 86034907 A 20070924